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Big Five and non-personality outcomes: $r = 0.20$, $r = 0.25$, $r = 0.19$, $r = 0.27$, $r = 0.30$ and what we can learn from that

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Big Five and non-personality outcomes

$r = 0.20$ $r = 0.25$ $r = 0.19$ $r = 0.27$ $r = 0.30$

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What do these items have in common?

- Carrot
- Cabbage
- Eggplant
- Potato

What do these items have in common?

If you ...

- ... behave antisocially
- ... have had a divorce
- ... smoke and drink too much
- ... display risky sexual behaviour and have had a STD
- ... do not adhere to treatment
- ... perform academically poorly
- ... have low job satisfaction
- ... behave counterproductively at workplace
- ... have low well-being
- ... are already dead

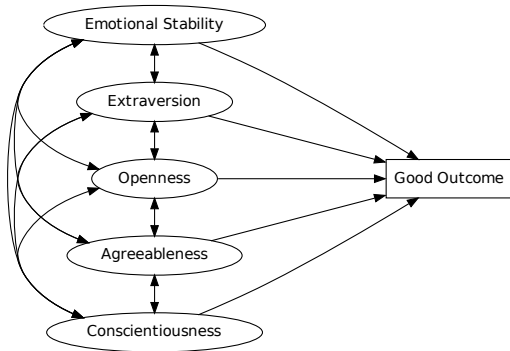
... chances are that you would score (but only slightly) ...

- ... above-average in Neuroticism
- ... below-average in Agreeableness
- ... below-average in Conscientiousness
- ... possibly below-average in Extraversion and Openness

$r = 0.05 \dots 0.25$

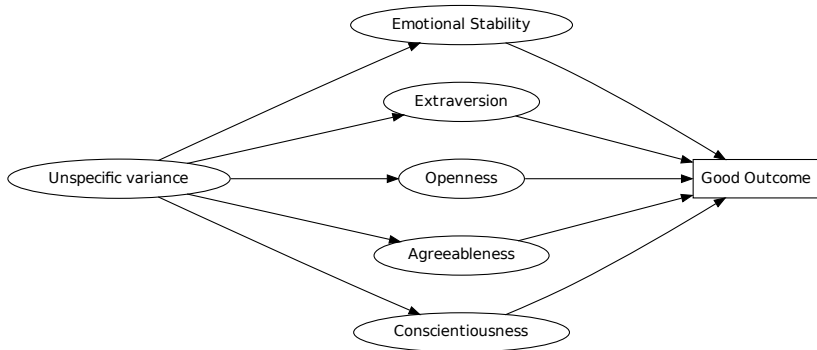
All positive things go together

A fact of life



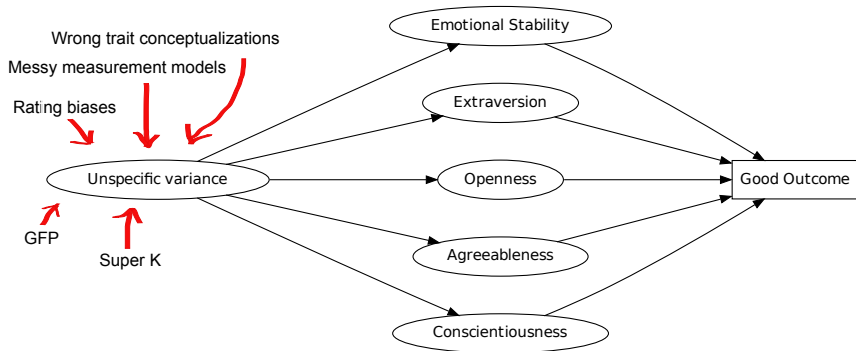
Some unspecific variance shining through traits?

A latent thing underlying latent things



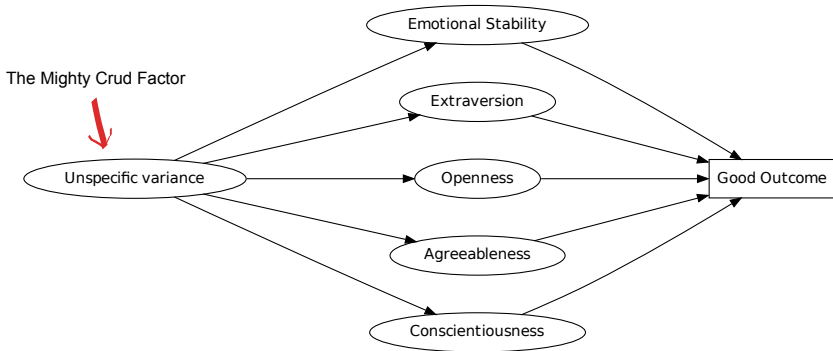
What is the 'unspecific variance' anyway?

The Big Good Trait. Or just junk



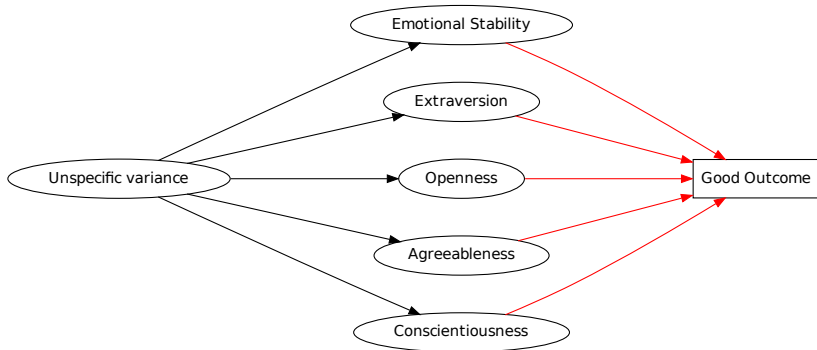
Everything correlates with everything

Because everything matters a bit for something



How much do the **particular traits** contribute?

Or is it just the unspecific thing all over the place



Why bother?

Isn't the Big Five just good enough?

- If we want to **'validate' particular traits** by showing their links with outcomes, the lurking unspecific variance is bad
- If we want to **explain outcomes**, unspecific variance is not really helpful either

We may need an adjusted baseline

To interpret trait-outcome associations

A possible solution:

- Create random traits, correlate these to the outcome
- The random associations may provide a better baseline
- Compare 'true' associations with this instead

Möttus, R., Johnson, W., Booth, T., Deary, I. J., Konstabel, K., Realo, A., & Allik, J. (under review)

The specificity metric as a diagnostic tool

Probability of a 'true' trait beating out a random trait

$$Specificity = \frac{\sum_{i=1}^k (true.association > random.association)}{k} \quad (1)$$

k is the number of random item draws

Möttus, R., Johnson, W., Booth, T., Deary, I. J., Konstabel, K., Realo, A., & Allik, J. (under review)

Random NEO-FFI traits predict school grades

And beat out super-significant neuroticism and openness

	Estimate	p	Specificity
Neuroticism	0.10	0.001	0.36
Openness	0.10	0.001	0.35
Conscientiousness	0.23	0.001	1.00
Average random trait	0.12	0.001	

Möttus, R., Johnson, W., Booth, T., Deary, I. J., Konstabel, K., Realo, A., & Allik, J. (under review)

specificity: An R-package (in CRAN)

Univariate associations along with specificity estimates and adjusted effect sizes:

	Estimate	Std. Error	t value	Pr(> t)	Spec	Adj.Est
Neuroticism	0.103	0.027	3.848	0.000	0.363	-0.017
Extraversion	-0.026	0.027	-0.969	0.333	1.000	-0.191
Openness	0.099	0.028	3.519	0.000	0.349	-0.016
Agreeableness	0.052	0.027	1.960	0.050	0.018	-0.082
Conscientiousness	0.231	0.025	9.078	0.000	1.000	0.155

Mean random association: 0.122

Konstabel, K. & Möttus, R. (2013). specificity: Specificity of personality trait-outcome associations. R package version 0.11.

Random BFI traits predict psychopathy

And beat out super-significant neuroticism, openness, and conscientiousness

	Estimate	p	Specificity
Emotional Stability	-0.32	0.001	0.56
Extraversion	-0.08	0.04	0.00
Openness	-0.13	0.001	0.00
Agreeableness	-0.45	0.001	1.00
Conscientiousness	-0.30	0.001	0.45

Average random trait	0.33	0.001	
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Conclusions

When random scoops of items do a better job than the Broad Traits

- Some super-duper significant trait-outcome associations reflect unspecific variance kicking around in personality ratings
- The unspecific variance may be True Variance (of whatever sort)
- But it may also reflect junk
- In either case, such associations hard to interpret at face value
- Trait-outcome associations poor indicators of trait validity
- The specificity metric provides diagnostic information



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